

ABSTRACT OF THE DISCLOSURE

The present invention provides a block copolymer of styrene and an unsaturated cyclic anhydride, such as maleic anhydride, a process for making a copolymer using controlled free radical polymerization in which certain parameters are adjusted to control the microstructure and molecular weight of the copolymer, and a method for using the block copolymer, including as a compatibilizer. Microstructure and molecular weight in the block copolymer can be controlled by adjusting the ratio of stable free radical to initiator. The copolymer can be made in a one step process and has a controlled microstructure that allows one block to be reactive toward several chemical moieties available in engineering polymers and the other block to be fully miscible with polystyrene or polymers miscible with polystyrene or polymers miscible with polystyrene such as polyphenylene ether.